

## Claims

- [c1] A process for the manufacture of temperature-sensitive polymers, or mixtures thereof, using a heat transfer fluid to control temperature during said manufacture, wherein said heat transfer fluid comprises a hydrocarbon fluid selected from aliphatic hydrocarbons, alicyclic hydrocarbons, aliphatic- or alicyclic-substituted aromatic hydrocarbons, or mixtures thereof, said hydrocarbon fluid having a boiling point from 220° C to 250° C and a melting point less than 40° C.
- [c2] The process of claim 1 wherein said hydrocarbon fluid has a melting point less than or equal to 20° C.
- [c3] The process of claim 1 wherein said heat transfer fluid further comprises biphenyl, diphenyl oxide or a biphenyl/naphthalene mixture, provided the heat transfer fluid has a boiling point from 220° C to 250° C and a melting point less than 40° C.
- [c4] The process of claim 1 wherein said heat transfer fluid comprises a fluid selected from phenylcyclohexane, bicyclohexane, at least one hydrogenated biphenyl having a level of hydrogenation between phenylcyclohexane and

bicyclohexane, or mixtures thereof.

- [c5] The process of claim 4 wherein said heat transfer fluid is selected from phenylcyclohexane, bicyclohexane or mixtures thereof.
- [c6] The process of claim 5 wherein said heat transfer fluid is bicyclohexane.
- [c7] The process of claim 5 wherein said heat transfer fluid is phenylcyclohexane.
- [c8] The process of claim 5 wherein said heat transfer fluid is a mixture of phenylcyclohexane and bicyclohexane.
- [c9] The process of claim 4 wherein said heat transfer fluid further comprises biphenyl, diphenyl oxide or a biphenyl/naphthalene mixture, provided the heat transfer fluid has a boiling point from  $220^{\circ}\text{C}$  to  $250^{\circ}\text{C}$  and a melting point less than  $40^{\circ}\text{C}$ .
- [c10] The process of claim 1 wherein the temperature-sensitive polymer has, under ambient conditions, a melting point in the range of from  $230^{\circ}\text{C}$  to  $248^{\circ}\text{C}$  and wherein the boiling point of said heat transfer fluid is, under ambient conditions, about  $230^{\circ}\text{C}$  to about  $245^{\circ}\text{C}$ .
- [c11] The process of claim 10 wherein the boiling point of said heat transfer fluid is in the range of from about  $235^{\circ}\text{C}$  to

about 243<sup>°</sup> C.

- [c12] The process of claim 1 wherein said temperature-sensitive polymer is selected from nylon 6, nylon 11, nylon 12, polytrimethylene terephthalate, polybutene-1, polybutylene terephthalate, polyethylene terephthalate, polypropylene, or high-density or low-density polyethylene, said polymer having a melting point, under ambient conditions, in the range of from about 230<sup>°</sup> C to about 248<sup>°</sup> C.
- [c13] The process of claim 1 wherein said temperature-sensitive polymer is polyethylene terephthalate or a copolymer thereof.
- [c14] The process of claim 1 wherein said temperature-sensitive polymer is selected from poly(methylmethacrylate), a polyacetal, a polyionomer, an EVA copolymer, cellulose acetate, hard polyvinylchloride or polystyrene.
- [c15] A process for the manufacture of temperature-sensitive polymers, or mixtures thereof, using a heat transfer fluid to control temperature during said manufacture, wherein said heat transfer fluid comprises a fluid prepared by the catalytic hydrogenation of biphenyl at suitable temperature and hydrogen pressure, wherein hydrogenation is stopped when the refractive index of the hydrogenation

reaction mixture at 25 °C is in the range of 1.4775 to 1.544.

- [c16] The process of claim 15 wherein the refractive index of said heat transfer fluid is 1.4775 to 1.5236.
- [c17] The process of claim 15 wherein the refractive index of said heat transfer fluid is 1.4775.
- [c18] The process of claim 15 wherein the refractive index of said heat transfer fluid is 1.523 to 1.5236.
- [c19] The process of claim 15 wherein said heat transfer fluid further comprises biphenyl, diphenyl oxide or a biphenyl/naphthalene mixture, provided the heat transfer fluid has a boiling point from 220 °C to 250 °C and a melting point less than 40 °C.
- [c20] The process of claim 15 wherein the temperature-sensitive polymer has, under ambient conditions, a melting point in the range of from 230 °C to 248 °C and wherein the boiling point of said heat transfer fluid is, under ambient conditions, about 230 °C to about 245 °C.
- [c21] The process of claim 20 wherein said temperature-sensitive polymer has a melting point in the range of from about 235 °C to about 243 °C.
- [c22] The process of claim 15 wherein said temperature-sensitive

tive polymer is selected from nylon 6, nylon 11, nylon 12, polytrimethylene terephthalate, polybutene- 1, polybutylene terephthalate, polyethylene terephthalate, polypropylene, or high-density or low-density polyethylene, said polymer having a melting point, under ambient conditions, in the range of from about 230° C to about 248° C.

- [c23] The process of claim 15 wherein said temperature-sensitive polymer is polyethylene terephthalate or a copolymer thereof.
- [c24] The process of claim 15 wherein said temperature-sensitive polymer is selected from poly(methylmethacrylate), a polyacetal, a polyionomer, an EVA copolymer, cellulose acetate, hard polyvinylchloride or polystyrene.
- [c25] An article produced by the process of claim 1.
- [c26] An article produced by the process of claim 4.
- [c27] An article produced by the process of claim 15.